

# EXTENSIBILITY IN JAPANESE NOUN MODIFICATION

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## ABSTRACT

This paper discusses the relationship between the modifying clause and the modified noun in Japanese. In some cases the closeness between them is weaker than in the prototypical case, whereas in others the modification is actually impossible. Within the framework of Matsumoto [1], who applied Frame Semantics to Japanese clausal noun modification, we analyze what conditions make the modification possible. We propose that the degree of linkage between modifier and modified extends from impossibly distant to acceptably close, where the Relational Frame is evoked. This type of phenomenon can be found in various dimensions: space, time, and the cause-and-effect relation. The degree of extensibility is determined by the world-view of the speaker, the tense/aspect choice in the clause, the aspectual character of the noun, and so on.

## 1. INTRODUCTION

Noun modification in Japanese has a strong hold on linguists' interest, since it has such a diverse types of expression. The most influential work in the field would be Teramura [2], who sees Japanese clausal noun modification as having a dichotomy between *Uti no Kankei* (Inner Relationship) and *Soto no Kankei* (Outer Relationship), depending on whether there is a clause-internal gap which has the same reference as the head noun or not. Matsumoto [1], introducing the Frame Semantics developed by Fillmore [3], analyzes noun-modifying clauses into three types according to which element(s) evoke(s) the frame: the predicate in the modifying clause (Clause Host Type), the modified head noun (Noun Host Type), or both of them (Clause Noun Host Type). These studies, however, have concentrated on sharply classifying the expressions and therefore have not been able to capture the real nature of noun modification.

Consider the following examples, where the clause *kimi o mituketa* modifies a noun:

- (1) a. *[[kimi o mituketa] kooen]*  
you ACC found park  
'the park in which ( ) found you'  
b. *?[[kimi o mituketa] matu]*  
you ACC found pine.tree  
'the pine tree at which ( ) found you'

Although the relation holding between the clause and the noun is that of the situation and the location where it occurs (LOCATIVE reading), *kooen* 'park' is perfectly grammatical in (1a), whereas in (1b) *matu* 'pine tree' sounds awkward. In the latter case, however, there is instead a slight possibility of NOMINATIVE reading 'the pine tree found you.' More interestingly, adding a phrase such as *omoide no* 'full of memory' to the noun makes the pine tree example more acceptable:

- (2) *[[kimi o mituketa] omoide no matu]*  
you ACC found memory GEN pine.tree  
'the pine tree full of memory at which ( ) found you'

An examination of this phenomenon will provide us a helpful key to the essence of modification, the relation between the modifier and the modified. What seems to be most relevant here is the degree of closeness which the two have to each other. What does this "closeness," then, mean in modification, and what are the factors which control it? No other study has previously been successful in explaining noun

modification from this viewpoint.

The purpose of this paper is to investigate the relationship between the modifying clause and the modified noun in Japanese.<sup>1</sup> We will start our discussion by making a brief survey of the major studies conducted on clausal noun modification in Japanese. Section 3 will examine Matsumoto's Frame-Semantic analysis [1], upon whose framework this study is based. In the fourth section, the concept of "extensibility" will be introduced to treat the phenomenon described above not solely in space but also in other dimensions. The factors in this extensibility will then be analyzed in detail to determine in what way the degree of the extensibility is decided. The final section is a conclusion.

## 2. NOUN MODIFICATION IN JAPANESE

As a starting point, we will observe the characteristics of noun-modifying expressions in Japanese, noting parallels with general characteristics the Japanese language. As Okutsu [4] states, to study noun modification means to study the structure of Japanese: in other words, the essential structure of the language is well reflected in the structure and meaning of noun modification. We will then make a brief survey of prior theories, in view of the issue posed in the introduction.

### 2.1 Japanese and Noun Modification

Japanese has the following characteristics as Kuno ([5]; [6]) and others point out. Let us observe how these characteristics are reflected in the structure of noun modification, as this will be of great help to our later discussion. First, the head noun comes in the final position:

- (3) [*sensei kara kiita*] *hanasi*

teacher ABL heard story

'the story (which) ( ) heard from the teacher'

Second, Japanese is a PRO-drop language and therefore the hearer has to recover the missing argument from the context (see the parentheses in the English gloss above). In this sense, Japanese is more pragmatics-oriented than English, as Matsumoto [1] notes. The third characteristic, even more significant, is that Japanese has no relative pronoun. An examination of example (3) will make clear immediately that no relative pronoun is employed in order to connect the two parts, whereas the gloss demonstrates that in English an ACCUSATIVE relative pronoun would be needed. This fact makes two major types of noun-modifying constructions syntactically the same: the relative clause type and the noun complement type. Observe:

- (4) [*onnanoko ga koguma no okayu o tabetesimau*] (toiu) *hanasi*<sup>2</sup>

girl NOM little.bear GEN porridge ACC finish.eating COMP story

'the story in which the girl eats the little bear's porridge'

We can find a gap in the relative clause type (3). In the noun complement type (4), on the other hand, there is no such gap and, in Matsumoto's [1] term, the noun "encapsulates" the content of the clause. This difference Teramura [2] and others have given considerable attention to.

### 2.2 The Traditional View and Its Implications

Teramura [2] postulates the dichotomy of *Uti no Kankei* (Inner Relationship) and *Soto no Kankei* (Outer Relationship), according to whether a gap exists in the modifying clause or not:

- (5) a. [*sanma o yaku*] *otoko*

saury (fish) ACC grill man

'the man who is grilling a saury'

- b. [*sanma o yaku*] *nioi*

saury ACC grill smell

'the smell of grilling a saury'

[2]

The Inner Relationship in (5a) is caused by the gap in the clause: *otoko* is relativized in a NOMINATIVE case. In the Outer Relationship instance (5b), on the other hand, *nioi* cannot be traced to a gap. It should be noted, however, that his Outer Relationship embraces everything other than gap type cases and therefore fails to capture the meaningful difference between (4) and (5b). That is to say, the referent of the noun *nioi* does not encapsulate the content of the clause but it rather signifies a by-product, a result of grilling.

In contrast to Teramura [2], whose approach is interpretive, Okutsu [4] takes a syntactic viewpoint. He

applies an Equi-NP deletion to the Inner Relationship type, which he designates as *Dooitu Meisi Rentai Syuusyoku* (Equi-Noun Modification). The other type is *Huka Meisi Rentai Syuusyoku* (Additive Noun Modification), which is classified into two major types: *Dookaku Rentai Meisi* (Appositive Noun), which is exemplified in (4), and *Sootai Meisi* (Relative Noun) such as the one below:

- (6) [[*Gakko e iku*] *mae*] *ni yuubinkyoku ni yotta*.  
 school GOAL go before LOC post.office LOC stopped  
 '( ) stopped at the post office before ( ) went to school.'

Relative Noun represents a point (or a domain) relative to the reference point signified by the clause. We will come back to this sort of noun modification in later sections. He also postulates a subcategory in the first type of Additive Noun Modification for cases such as (5b): *Bubunteki Dookaku Rentai Meisi* (Quasi-Appositive Noun), for cases in which not the whole content but part of the content (e.g. feeling) is appositive to the referent of the noun. He has thrown a new light on this issue in that he has given an independent status to examples such as (5b). It should be noted here that the Quasi-Appositive Noun has some kind of relativeness in common with the Relative Noun. As has already been pointed out, *nioi* is a by-product and the result of grilling in (5b). This might well be designated as a cause-and-effect relation: there must be a small distance between them, yet the distance should not be a complete gap but a kind of relationship which connects them to each other. This reminds us of the relation between a reference point and the designatum in Relative Noun cases. This has profound implications, which we will discuss later, especially in section 4.

### 3. THE FRAME-SEMANTIC ANALYSIS

Having examined the major studies and their implications for this present study, we now proceed to the Frame-Semantic analysis by Matsumoto [1] (her series of studies on noun modification are found elsewhere, most recently [7]). Observe the following example, which the previous studies would not have been able to explain:

- (7) [[*yaseru*] *onsen*]  
 become.slim hot.spring  
 'the hot spring by soaking in which ( ) become(s) slim' (cited by Matsumoto [1])

The example above does not have any clause-internal gap, nor does the noun *onsen* 'hot spring' encapsulate the content of the modifying clause *yaseru* '( ) become(s) slim.' By setting frames as the main apparatus, her theory defines Japanese as a semantics-/pragmatics-oriented language and succeeds in incorporating these seemingly exceptional examples into a simpler trichotomy. Let us have a brief look at Frame Semantics first, which it is based on.

#### 3.1 Frame Semantics

In Frame Semantics, developed by Fillmore [3], the frame is a model which is employed to describe the conceptualization of the real world.<sup>3</sup> A linguistic entity such as verb or noun which can be a nucleus of some concept "evokes" a frame, that is to say, a larger context or situation where various roles participate. Here some participants may be in a valency relation (i.e. required), while others may not. Observe, for example, the well-known Commercial Transaction Frame by Fillmore & Atkins [8]:

- (8)
- |      | <i>Buyer</i> | <i>Seller</i> | <i>Goods</i> | <i>Money</i> |
|------|--------------|---------------|--------------|--------------|
| BUY  | Subj         | (from)        | D-Obj        | (for)        |
| SELL | (to)         | Subj          | D-Obj        | (for)        |
- (excerpted from [8])

The verbs *buy* and *sell* evoke a frame of commercial transaction where the elements Buyer, Seller, Goods, and Money participate. Each of these roles must be given grammatical realization: it is realized in different grammatical status according to the verb chosen and the context. For example, in the BUY case, the Buyer role is required to be realized as a subject; in the SELL case, on the other hand, it is optionally realized as a prepositional phrase *to* NP. What we should note here is that we can capture those diversified transaction situations in a single frame although they are relevant to several different roles and employ different verbs.

Matsumoto [1] uses a pragmatic notion, the "world-view" of the speaker, in order to explain examples such as (7) above in a single framework. In Japanese, roles which would be impossible in other languages such as English are often involved in a situation. It is appropriate, therefore, to postulate frames in order

to explicate the intuition of Japanese speakers. In the next subsection, we will introduce Matsumoto's Frame-Semantic approach, laying emphasis on the points which will be helpful in our later discussion.

### 3.2 The Three Types of Noun-Modifying Expressions

Compare the following examples, where the verb *katta* 'bought' is employed:

- (9) a. *[[katta] ringo]*  
bought apple 'the apple(s) (which) ( ) bought'  
b. *[[katta] hanasi]*  
bought story 'the story that ( ) bought ( )'  
c. *[[katta] kaeri]*  
bought way.home 'on (one's) way home after ( ) bought ( )'

The relation between the modifying clause and the modified noun, however, is different in each case. According to Matsumoto's framework, the examples in (9a), (9b), and (9c) are classified as Clause Host Type, Noun Host Type, and Clause Noun Host Type, respectively. Let us examine each of them in greater detail and discuss the grounds for this classification.

The first one, the Clause Host Type, is the most widely distributed. In this type, the verb (predicate) "evokes" a Predicate Frame: in (9a), the verb *katta* evokes a BUY (BOUGHT) Frame, where the role Goods (here *ringo*) participates. In order to know if a certain element is a participant in a frame or not, she proposes applying a diagnostic with regard to the verb. Suppose that A says "*Kaimasita*" 'bought' and B is interested in the situation where he or she bought something. B employs the interrogative form "*sono N wa...*" so as to obtain some information from A. *Sono* 'that' is a demonstrative which refers to something which is in the domain of the second person in a way like "the thing you have just talked about." We can safely say that, therefore, if the form "*sono N wa...*" is possible, the referent of the noun N can be considered to participate in the BUY (BOUGHT) Frame.

- (10) A: *Kaimasita.*  
'( ) bought ( ).'  
B1: *Sono sinamono wa doo desita ka.*  
that goods TOP how was QP  
'How were the goods?'  
B2: *Sono mise wa doko desu ka.*  
that shop TOP where is QP  
'Where is the shop?'  
B3: *??Sono mooke wa ikura desita ka.*  
that profit TOP how.much was QP  
'How much was the profit?'

[1]

In the above, the noun-modifying expressions *[[katta] sinamono]* and *[[katta] mise]* sound natural, whereas *[[katta] mooke]* does not.

The contrast in the following examples well illustrates that Japanese is a semantics-/pragmatics-oriented language. As we have already observed, there may be a gap in the modifying clause which the hearer must recover either from the context or directly from the modified noun. The noun modification concerning Goods (B1 in (10)) and Place (B2 in (10)) is possible, respectively:

- (11) a. *[[Donarudo Toranpu ga katta] mise] wa doko.*  
Donald Trump NOM bought shop TOP where  
'Where is the shop (which) Donald Trump bought?'  
b. *[[Tomotyran ga katta] mise] wa doko.*  
little.Tomo NOM bought shop TOP where  
'Where is the shop in which little Tomo bought ( )?'

[1]

What decides which role the noun carries, Matsumoto proposes, is the speaker's "world-view," which tells the hearer that a rich person can afford to buy a shop, while a small child cannot.

Second, the Noun Host Type is exemplified in (9b). There the noun *hanasi* 'story' evokes a Nominal Frame and "encapsulates" the content of the modifying clause. Another important characteristic of this type is that there is no such gap in the clause that the Clause Host Type has, which is well illustrated in (4).

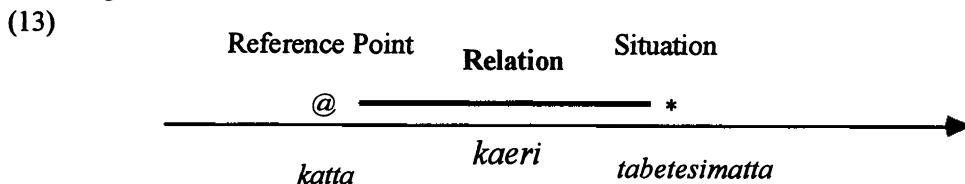
The third type, the Clause Noun Host Type, is introduced exclusively for this Frame-Semantic approach and has particular significance in this present study. As the name suggests, the predicate in the modifying clause and the noun host each other. In this type, what is denoted by the noun participates in

the content of the clause and, at the same time, encapsulates the content.

Postulating this type will make a great contribution to our analysis. A careful look at example (9c) clarifies that the relationship between the clause and the noun *kaeri* 'way home,' and the noun itself, have some relativeness: the situation depicted by the modified noun is posted relative to a reference point, which is instantiated by the modifying clause *katta*. In connection with the noun, the speaker then places on the time axis the situation which would be related to the reference point as in:

- (12) *Sono meron wa [[katta] kaeri] ni tabetesimatta.*  
 the melon TOP bought way.home LOC ate/finished.eating  
 '( ) ate the melon on (one's) way home after ( ) bought it.'

and the figure below illustrates this:



Since this composite frame has the function of relating the two situations, Matsumoto [1] designates it as a Relational Frame. In fact, this is reminiscent of the Relative and Quasi-Appositive Nouns assumed by Okutsu [4], which imply some relativeness between two situations. By postulating the Clause Noun Host Type, the theory succeeds in dealing with both of Okutsu's nouns, Relative and Quasi-Appositive. It is this relativeness that we should examine again in the Frame-Semantic analysis.

Matsumoto [1] without doubt has made a great leap in the field of Japanese noun modification, incorporating a new aspect of Frame Semantics and the pragmatic notion "world-view" into the framework. The trichotomy, particularly the Clause Noun Host Type, will contribute to our understanding significantly; however, the classification is, regrettably, too rigid to capture the fact which we observed in the introduction. In the next section, we will return to the question of the degree of closeness which the modifying clause and the modified noun have to each other.

#### 4. EXTENSIBILITY

Having examined the Frame-Semantic approach to Japanese noun modification, we are now in a position to extend our discussion and observation into the analysis of marginal examples such as the one in (1b).<sup>5</sup>

##### 4.1 Extension in Space

As a starting point, let us return to the examples in (1), which seem to be of the Clause Host Type:

- (1) a. *[[kimi o mituketa] kooen]*  
 you ACC found park  
 'the park in which ( ) found you'  
 b. *[[kimi o mituketa] matu]*  
 you ACC found pine.tree  
 'the pine tree at which ( ) found you'

Recall that in (1b) *matu* 'pine tree' sounds awkward and there is a slight possibility of NOMINATIVE reading 'the pine tree found you,' although the relation between the clause and the noun is the same in both examples: the verb *mituketa* 'found' evokes a Predicate Frame in which the nouns *kooen* and *matu* appear respectively. Is *matu* not qualified as a participant in this frame? For what reason does the difference in acceptability arise?

In order to seek for an answer to these questions, let us try other nouns which might refer to places where someone might be found. Consider:

- (14) *\*[[kimi o mituketa] kootuhyoosiki]*  
 you ACC found traffic.sign  
 'the traffic sign at which ( ) found you'

The combination with *kootuhyoosiki* is unacceptable because it is a thing which stands on the road as a traffic guide and is scarcely a place where such a situation occurs. See the following as well:

- (15) *[[kimi o mituketa] ??doozoo/?Hatikoozoo/basutee]*  
 statue Statue.of.Hachiko bus.stop

It should be noted, however, that the acceptability becomes higher in later examples. *Doozoo* 'statue' still sounds strange, whereas *Hatikoozoo* 'Statue of Hachiko' is much better, probably because it can be portrayed as a place where people arrange to meet. In the last example, *basutee* 'bus stop' is perfectly acceptable, since it is definitely a place where people come to wait for a bus. It follows from the discussion above that a certain kind of spatial extension from a point functions in these examples. Such extension is conducted by the speaker's world-view that people get together around some places while they do not in others. In (1a), it is obvious that *kooen* 'park' has a plenty of space inside. In the same way:

- (16) [[*kimi o mituketa*] \**zitensya*?? *kuruma*? *basu*/*tuukinbasu*]  
 you ACC found bicycle car bus commuter bus  
 'the bicycle/car/bus/omnibus in/on which ( ) found you'

Here, each of the nouns denotes a kind of vehicle. The wider space the speaker feels inside the vehicle, the more acceptable the expression becomes. As for *tuukinbasu* 'commuter bus,' the speaker feels as if he or she is inside the vehicle, exactly in the same manner as the park example. Let me add that as we saw in (1b), there is an incorrect reading in which the bicycle itself found 'you' (the NOMINATIVE reading). Interestingly enough, this reading becomes more likely as the acceptability of the LOCATIVE reading becomes less in (16).<sup>6</sup> We will come back to this point later on.

Recall as well that adding a phrase *omoide no* 'full of memory' to *matu* 'pine tree' makes the noun modification more acceptable in (2). We can say with reasonable certainty that the same kind of process is working here: the phrase *omoide no* helps to extend the domain which *matu* occupies. The pine tree ceases to be a mere thing any more: it is a place where some situation is likely to occur. This observation is supported by the following fact:

- (17) [[*kimi o mituketa*] (*omoide no*) *matu no mae/soba*]  
 you ACC found memory GEN pine GEN front/side  
 'the front /side of the pine tree (full of memory) at which ( ) found you'

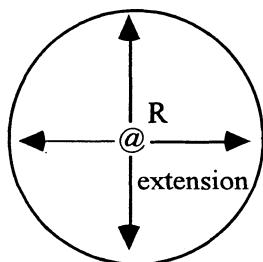
Putting after *matu* the noun *mae* 'front' or *soba* 'side,' which is a Relative Noun in Okutsu's theory [4] and a Relational Noun in Matsumoto's [1], the modification is now perfectly acceptable, evoking a Relational Frame.

We are now ready to propose a hypothesis to answer the questions posed in the introduction. To modify a thing means that a certain relation holds between the modifying and the modified. In Clause Host Type, the referent of the noun is one of the participants in the Predicate Frame. However, the examples we have observed here demonstrate that the situation is not so clear-cut. There are, in fact, cases where the linkage between the clause and the noun is somewhat different from the prototypical one: the degree of the distance (in other words, closeness) between the two differs from case to case. As is shown in (15) and (16), it can be too great, in which case the modification is impossible, and it can be near enough, in which case modification is possible. In the latter case, what is denoted by the clause is extended to the point where the Relational Frame is evoked. We should bear in mind that this degree of distance is not a dichotomy but a continuum. Therefore our hypothesis is:

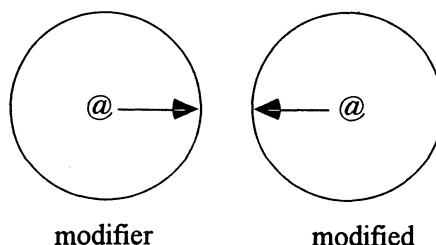
**Hypothesis:** the degree of linkage between the modifying clause and the modified noun extends from impossibly distant to acceptably close.

This hypothesis is illustrated in the diagram (18) below, where the reference point is in the middle and the area around it signifies the degree of extension:

(18) Extension



(19) Extensibility



The reference point is denoted by the content of the modifying clause, and if the extension is enough, it reaches the point signified by the noun. Let us call this degree of extension "extensibility." It seems

reasonable to suppose from what we have observed that extensibility is decided at least by the world-view of the speaker and the relation between the clause and the noun. We will discuss this point in section 5.

To make our analysis more precise, we have to admit that the extension can be two-way as is illustrated in (19). Recall that in our 'finding you' examples, the more space the speaker feels around or inside the referent of the noun, the more acceptable the modification becomes: in other words, the extensibility is higher. In such examples, therefore, the extensibility of the noun is stronger.

Now that the notion of extensibility has been introduced concerning extension in space, we will extend this hypothesis to other dimensions, i.e. to time, and cause-and-effect relations.

## 4.2 Extension from Space to Time

Cognitive Linguistics argues that the extension of one meaning into another happens very often in our language use. When we conceptualize the world and put it into a language form, we utilize a more concrete and physical experience or image in order to express a more abstract notion. This concrete conceptual structure which is extended to signify another meaning is called an Image Schema (Johnson [9] and Lakoff [10]; see Yamanashi [11] for an analysis of Japanese). The polysemy of a word is produced by an extension of the Image Schema. This subsection will demonstrate that meanings can be extended from space to time.

Consider, for example, the extension of the meaning of the noun *mae*:

- (20) *Hatikoozoo no mae de kimi o mituketa.*

Statue.of.Hachiko GEN front LOC you ACC found

'( ) found you in front of the Statue of Hachiko.'

In (20) above the meaning of *mae* is that of space, i.e. 'front.' On the other hand, the *mae* below signifies a temporal relation:

- (21) *Sensoo no mae ni Hatikoo ga sinda.*

war GEN before LOC Hachiko NOM died

'Hachiko died before the war.'

Now that we have seen that the meaning of *mae* can be extended from space to time, let us examine whether this observation holds in noun-modifying expressions. Compare these Clause Noun Host Type examples:

- (22) *[[Hatikoo ga syuzin o matu] mae] o hitobito ga toorisugita.*

Hachiko NOM master ACC wait front LOC people NOM passed.by

'In front of Hachiko waiting for his master, people passed by.'

- (23) *[[Hatikoo ga sinu/\*sinda] mae] ni syuzin ga sinda.*

Hachiko NOM die died before LOC master NOM died

'Before Hachiko died, his master died.'

In (22) the noun *mae* signifies a spatial relation, while in (23) it is temporal. An interesting point to note here is the difference in the English and Japanese tense/aspect system. In English, the tense is past as in *died*, since the situation holds in the past. In Japanese, on the other hand, the tense/aspect is non-past by default. The reason is that the noun *mae* requires a default form inside the modifying clause irrespective of the absolute time when the situation occurs, in order to signify that the situation in the modifying clause happens posterior to the situation outside the clause. Though it is not necessary for the purpose of this paper to discuss the tense/aspect system in Japanese in detail, we will return to this point later on.

Recall that the extensibility is relatively high because of the world-view of the speaker in (15), where 'in front of' is already implied:

- (24) (=15) *[[kimi o mituketa] Hatikoozoo]*

you ACC found Statue.of.Hachiko

'the Statue of Hachiko in front of which ( ) found you'

If we add a Relational Noun to this, the result is perfectly acceptable:

- (25) *[[kimi o mituketa] Hatikoozoo no mae]*

you ACC found Statue.of.Hachiko GEN front

'the front of the Statue of Hachiko where ( ) found you'

In a temporal dimension, things are somewhat different. The extensibility of the 'before' reading is very low:

- (26) *[[Hatikoo ga sinda] sensoo] (\* in the sense of 'before')*

Hachiko NOM died war

'the war before/during which Hachiko died'

The example above forces a simultaneity (i.e. no time lag) between the situation in the clause and the referent of the noun: Hachiko died during the war or marginally, after the war. This might be because the combination of the two does not give us an impression of any relativeness. Since the speaker/hearer processes the sentence from the beginning in order, it will obstruct the flow of information if he or she is forced to re-sequence events at the noun *sensoo* in cases where there is no marker of priority. We will discuss this point again in the next section. The 'before' reading can be expressed, however, in the Relational Noun:

- (27) [[*Hatikoo ga sinda*] *sensoo no mae*]  
 Hachiko NOM died war GEN before  
 'the time before the war, when Hachiko died'

In the next subsection, we will extend the observation of the time lag to an even more abstract dimension.

#### 4.3 Extension from Time to Cause-and-Effect Relation

As we have seen in the last subsection, a simultaneity or a slight posteriority is normally necessary between the modifying clause and the modified noun. Since the speaker/hearer interprets the sentence from the beginning, he or she encounters the modifying clause first and then the modified noun in Japanese. Due to this process, the situation in the clause naturally holds at the same time with, or precedes, the situation denoted by the noun; with *mae*, 'before,' this order is reversed. Unless the head noun explicitly states the priority, therefore, this requirement is in effect.

A posteriority time lag is, as we can predict, possible if it is not so big. Consider the following, where the situation in the clause precedes what is denoted by the noun *asa* 'morning':

- (28) (?) [[*yonago ni tomatta*] *asa*]  
 Yonago LOC stayed.overnight morning  
 'the next morning when ( ) stayed overnight in Yonago' (cited by Teramura [2])

The situation *yonago ni tomatta* '( ) stayed overnight in Yonago' functions as a reference point and extends to the referent of *asa* 'morning,' where it evokes a Relational Frame. The extensibility therefore is quite high here. The acceptability of this extension, however, is marginal for some speakers of Japanese; therefore in order to remove the time lag, we can employ *yokuasa* 'next morning' or *kaeri* 'way home' (see (12) and (13)) to make a perfect Clause Noun Host Type case:

- (29) [[*yonago ni tomatta*] *yokuasakaeri*]  
 Yonago LOC stayed.overnight next.morning way.home  
 'the next morning when ( ) stayed overnight in Yonago'  
 'on (one's) way home after ( ) stayed overnight in Yonago'

We can employ *yoru* 'night' to obtain a Clause Host Type example:

- (30) [[*yonago ni tomatta*] *yoru*]  
 Yonago LOC stayed.overnight night  
 'the night when ( ) stayed in Yonago'

Here the two situations hold contemporaneously.

The observation above as well can be extended to a more abstract dimension, i.e. the cause-and-effect relation. As we have discussed over and over again since the beginning of this paper, in some cases, there is a sort of relativeness between modifier and modified. We have made it clear in previous subsections that such relativeness does exist, though not so strongly, in cases where the modified noun does not itself seem to show any relativeness, and this can be explained by degree of extensibility. This is the case in spatial and temporal dimensions, and if there is a temporal relation, in some cases we can safely infer that the same relation possibly holds between cause and effect. In the following example, the relation between the referents of the clause and the noun is that of time, and at the same time, of cause-and-effect:

- (31) [[*yonago ni tomatta*] *tuke*]  
 Yonago LOC stayed.overnight bill  
 'the bill charged for staying overnight in Yonago'

The *tuke* 'bill' is produced as a consequence of staying overnight in Yonago and the extensibility is quite high here.

Shirakawa [12] proposes an analysis by Circumstance Presentation, arguing that the modifying clause presents the circumstance in which the hearer can identify the referent of the modified noun. In (28), in his opinion, the result of staying in Yonago is identified in the *asa* 'morning' and no time lag exists between the two. He suggests that in (32) below there is no such sequence and judges it as unacceptable:



(32) (?) [[*amaimono o tabesugita*] *musiba*] (\* judged by Shirakawa [12])  
 sweets ACC ate.too.much rotten.teeth

'the rotten teeth caused by eating too much sweets'

[12]

We do not share this view, however. In (32), the time lag does exist, though not surprisingly long. Though Shirakawa [12] insists that a big time lag is felt in (32) while there is no time lag in (28), we would not feel such a big difference, and the extension in (32) is adequately successful, though perhaps not perfectly acceptable. This can be explained by extensibility. If we put an adverb which clearly signifies a past definite time to break the connection, the extensibility will become much lower as in:

(33) [[\**kyonen/??konomae amaimono o tabesugita*] *musiba*]<sup>7</sup>

last.year the.other.day sweets ACC ate.too.much rotten.teeth

'the rotten teeth caused by eating too much sweets last year/the other day'

The more definite an adverbial is, the less possible extension is. The examples above demonstrate that our hypothesis concerning extensibility holds in cause-and-effect relation as well.

This section has hypothesized that extensibility affects noun modification in the dimensions of space and time, and also the cause-and-effect relation. Next we will reinforce this by analyzing what sort of factors and conditions can affect this phenomenon.

## 5. FACTORS OF EXTENSIBILITY

In this final stage of our discussion, we will look even deeper into the issue of noun modification in Japanese. We have already pointed out some of the factors which may affect the modification in earlier sections. For example, the world-view of the speaker sometimes makes the extensibility higher. In this section, we will add some more factors to our theory and analyze them in greater detail.

### 5.1 Case

As a first step, let us suggest an answer to the question in the introduction. In (1b) and the first two of the examples in (16), where the extensibility is lower, the modified noun has a NOMINATIVE reading (34a), although similar examples obviously have a LOCATIVE reading (34b). Consider again:

(34) (= (16)) [[*kimi o mituketa*] \**zitsensya/??kuruma*]

you ACC found bicycle car

a. 'the bicycle/car which found you'

b. 'the bicycle/car in/on which ( ) found you'

c. 'the rider/driver of the bicycle/car who ( ) found you'

The reason why the NOMINATIVE reading appears in marginal examples such as the above is that the Noun-Host-ness becomes stronger in this extension into a Clause Noun Host Type. In this process, the participants in the clause become less affected by the noun, which this time becomes more encapsulating. The situation therefore can be expressed totally within the clause. The NOMINATIVE reading is provoked now, because in a simplex clause, the NOMINATIVE case is the most likely accessible (Keenan & Comrie [13]). It is the world-view which suppress or promotes this reading: if the speaker considers the bicycle as non-agentive, the reading is untenable, whereas if he or she imagines a rider (see note 6) of the bicycle, the result is acceptable.

The same explanation can apply to the following example:

(35) [[*akatyān ga nemutteiru*] *okaasan no soba*]

baby NOM sleeping mother GEN side

'the mother's side by which the baby is sleeping'

[4]

If we delete the relational noun *soba* 'side' from this example, the result is definitely unacceptable, although the referent of the noun denotes a place where the baby is sleeping:

(36) \*[[*akatyān ga nemutteiru*] *okaasan*]

baby NOM sleeping mother

'the mother by whom the baby is sleeping'

Here *okaasan* 'mother' is an agentive noun and therefore has an utmost possibility of receiving a NOMINATIVE case. Since *akatyān* 'baby' already has that case in the clause, the cases clash and therefore the modification is impossible.

### 5.2 Tense/Aspect System

The next factor is the interaction between the tense/aspect system and the aspectual character inherent in the verb and the noun. It is well known that Japanese does not have a clear distinction between tense and aspect. The default form *-u* expresses the simultaneity or the posteriority, while the past/perfect form signifies the priority (see Kindaichi [14] etc.). In the following example, where the cause-and-effect relation holds, *yaku* signifies simultaneity and *yaita* priority:

- (37) [[*sanma o yaku/yaita*] *nioi*]  
 saury ACC grill grilled smell  
 'the smell of grilling a saury' (cf. (5b))

The default form *yaku* is normal, because for Japanese people, the smell produced when someone is grilling a saury is appetizing. Since *nioi* can of course be produced after grilling, the past/perfect form *yaita* is also possible. The example of *nioi* is therefore fully extensible.

Abe [15] notes that (38) below is unacceptable:

- (38) \*[[*ie o tateru*] *gomi*]<sup>8</sup>  
 house ACC build trash  
 'the trash which is produced when ( ) build a house'

He reduces the difference between (37) and (38) to event-ness. This is supported by Okutsu's observation [4] that *nioi* 'smell' can be used in a verb construction while *gomi* 'trash' cannot:

- (39) *li nioi/gomi ga suru.*  
 good smell refuse NOM feel

'I smell something sweet.' (*gomi* example is unintelligible) [4]

In our analysis, however, the example in (38) can be explained by the factors which affect the extensibility. The aspectual character inherent in *tateru* 'build' is accomplishment, which pays attention to the end point of process. In case of the noun *gomi* 'trash,' unlike *nioi* 'smell,' it is produced after some activity has finished: in other words, it is related to the end point. The example below proves that if the end of the process is specified aspectually, the extensibility becomes higher:

- (40) ?[[*ie o tateta/tatetesimatta*] *gomi*]  
 house ACC built finished.building trash  
 'the trash which is produced when ( ) has/have built a house'

In case of *taberu* 'eat,' which signifies an activity, this observation is proved more clearly:

- (41) [[\**taberu*/?*tabeta*/?*tabetesimatta*] *gomi*]  
 eat ate finished.eating garbage  
 'the garbage which is produced when ( ) eat/ate/has eaten'

### 5.3 Connector

In section 4.1, we have seen that the expression *omoide no* 'full of memory' functions as a kind of connector: it takes the content *kimi o mituketa* '( ) found you' and hands it over to the noun *matu* 'pine tree' to make the extensibility higher. In the following example as well, putting an adjective *siawasena* 'happy' with the head noun improves the extensibility:

- (42) [[*Namie to kekkonsita*] ?*seikatu/siawasena seikatu*]  
 Namie GOAL married life happy life  
 'the (happy) married life with Namie'

Some verbal expressions also trigger this process. The auxiliary verb *-sugiru* 'do to excess,' attached to the verb in the modifying clause, connects the situation (i.e. cause) there to the situation denoted by the noun (i.e. effect). *Musiba* 'rotten teeth' is supposed to be produced after a certain amount of time, and *hutukayoi* 'hangover' happens the next morning:

- (43) [[*amaimono o ??tabeta/?tabesugita*] *musiba*] (cf. (32))  
 sweets ACC ate overate rotten.teeth  
 'the rotten teeth caused by eating sweets/too much sweets'  
 (44) [[*??nonda/?nomisugita*] *hutukayoi*]  
 drank drank.too.much hangover  
 'the hangover caused by drinking too much'

The expression *-sugiru* fills up the time lag and thus promotes the extensibility.

### 5.4 World-View

The world-view of the speaker plays a significant part in Japanese noun modification, since Japanese is

semantics-/pragmatics-oriented. Though this factor has been discussed from time to time in this paper, I would like to emphasize this remarkable feature of Japanese in this final subsection. In the following example, the noun *sugi* 'cedar' sounds strange; however, when it is changed to *ipponsugi*, the extensibility becomes quite high:

- (45) [[*kimi to wakareta*] ?*sugi/ipponsugi*]  
 you ABL parted cedar (no equivalent in English)  
 'the cedar at which ( ) parted from you'

This is because the world-view of the speaker that *ipponsugi* is a tall cedar which stands alone on the outskirts of a rural village and performs the role of a milestone, and that the speaker can imagine associating a sad story with the tree. The example below shows that if the speaker can think of the situation, e.g. playing hide-and-seek, the modification is possible:

- (46) (\*)[[*kimi o mituketa*] *densinbasira*]  
 you ACC found electric.light.pole  
 'the electric light pole behind which ( ) found you'

It is concluded that various factors such as case, tense/aspect system, aspectual character of the noun, connector and world-view can affect extensibility. Since the extension is two-way, i.e. from the modifying clause and from the modified noun, these factors can also function at both sides.

## 6. CONCLUSION

This paper has approached to noun modification in Japanese from a new perspective. A new notion "extensibility" was introduced in order to explain cases where the linkage between the modifying clause and the modified noun is in some way different from the prototypical one.

In the opening section, we examined the traditional views of noun modification and pointed out in what way these studies would contribute to our study. We then proceeded to Matsumoto's Frame-Semantic analysis, whose trichotomy is remarkable especially in that it postulates the Clause Noun Host Type, where the clause and the noun host reciprocally and a Relational Frame is evoked. We incorporated extensibility into her framework in order to adjust the theory to fit the facts more precisely. Our analysis hypothesized that the degree of linkage of the modifying clause and the modified noun extends from impossibly distant to acceptably close, and this hypothesis based on the spatial dimension can also be applied to other dimensions: time and the cause-and-effect relation. The extensibility is decided by various factors such as case, tense/aspect system, aspectual character of the noun, connector, and world-view of the speaker. These factors can affect the extensibility from the side of both the modifying clause and the modified noun.

Though we laid great stress on the world-view of the speaker, the definition of world-view itself is quite vague, which drawback Matsumoto shares. However, the value of these studies lies in the argument that the speaker plays a substantial role in choosing language expressions. From this point we will be able to go on to an even more detailed and deeper examinations of modification in general.

## 7. NOTES

1. It is far beyond the scope of this paper to cover all the noun-modifying expressions in Japanese. In this paper, we will deal with clause-type noun modification only so as to focus on the questions issued in the introduction.
2. *Toiu* is a complementizer which introduces a modifying clause of complement clause type in some cases. For detailed discussion, see Masuoka [16] and Watanabe & Horie [17].
3. A similar notion is introduced in various fields such as linguistics, artificial intelligence, and so on. For example, the notion Schema is employed in Cognitive Linguistics by Langacker [18]. Here we will not pursue the issue but restrict our discussion to Fillmore's framework, which will contribute to our study significantly.
4. *Kaimasita* is a form which is politer than *katta*. Interestingly enough, this polite form does not normally appear in noun-modifying clauses.
5. The discussion in this section partly overlaps that of Nakayasu [19]. I am deeply indebted to Tokimoto for discussion and examples here.
6. Actually, still more possible readings exist in this example. If the speaker means a person who was on the bicycle (an extension from the bicycle itself), this expression is possible.
7. The adverb *kinoo* 'yesterday' should be prevented from occurring not solely because it denotes a

definite point in the past, but also because the speaker has a world-view that developing rotten teeth is a very slow process.

8. To make this acceptable, Abe [15] proposes to supplement the verb *deru* as in:

- (i) *[[ie o tateru toki ni deru] gomi]*  
 house ACC build when LOC produce trash  
 'the trash which is produced when ( ) build a house'

## 8. ACKNOWLEDGMENTS

My sincere thanks go to Shigeru Kushima, Shingo Tokimoto, Carl Mantzel, Hiroaki Utsunomiya and anonymous reviewers of PACLIC 13 for their valuable comments and Yukinori Takubo and Yasukado Watanabe for their generous assistance.

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